

## **REMARKS**

Applicants appreciate the Examiner's thorough consideration provided to the present application. Claims 1-6, 8, 11-13 and 17-21 are currently pending in the instant application. Claims 1, 8, 19 and 21 are independent. Claim 8 has been amended and claim 14 has been cancelled.

### **Reasons for Entry of Amendment**

As discussed in greater detail hereinafter, Applicants respectfully submit that the rejections under 35 U.S.C. § 103(a) are improper and should be withdrawn. Accordingly, the finality of the Final Office Action mailed on August 7, 2003 should be withdrawn.

If the Examiner persists in maintaining his rejections, Applicants submit that this Amendment was not presented at an earlier date in view of the fact that Applicants are responding to the Examiner's use of Official Notice (and Applicants' subsequent traversal) and/or the mischaracterization of Applicants own invention as "Admitted Prior Art" in a Final Office Action. In accordance with the requirements of 37 CFR 1.116, Applicants respectfully request entry and consideration of the foregoing amendments as they remove issues for

appeal (claims are cancelled) and place the current application in a condition for allowance.

**Claim Rejections Under 35 U.S.C. § 103**

Claims 1-4, 6, 8 and 11-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper (U.S. Patent No. 4,642,149) in view of Official Notice (since no other reference is cited). Claims 5, 17-18 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper in view of Maniscalco (U.S. Patent No. 1,979,975). Claims 19 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper in view of Applicants' Alleged Admitted Prior Art. These rejections are respectfully traversed.

In light of the foregoing amendments to the claims, Applicants respectfully submit that all of the rejections have been obviated and/or rendered moot. Since the prior art of record fails to teach or suggest each and every element of the claimed invention, the Examiner's rejections under 35 U.S.C. § 103(a) should be withdrawn.

The Examiner is reminded that the laws and rules of U.S. patent practice do not excuse the Examiner's burden of searching the prior art to support the

Examiner's opinions as to the state of the prior art and/or the patentability of Applicants' inventions. Even though the Examiner has admitted that the prior art of record fails to teach or suggest every feature of the claimed invention, it is the Examiner's opinion that it is not necessary to show these missing features in the prior art of record. Instead, the Examiner has relied upon alleged holdings in irrelevant case law, the Examiner's personal opinions about the status of the prior art and Applicants own patent application to fill in the gaps of the Examiner's rejections, i.e., despite Applicants specific and seasoned traversal of this practice by the Examiner. Applicants submit that these rejections are improper and should be withdrawn.

#### **Claim Rejection Based Solely upon the Harper Reference**

Applicants submit that all of the rejections based upon the Harper reference should be withdrawn as this reference fails to teach or suggest each and every limitation of the unique combination of limitations of the claimed invention. The Examiner has unequivocally admitted that Harper fails to teach or suggest a plurality of isolation and flow direction control plates. "Harper discloses all the claimed limitations except a plurality of isolation and flow direction control plates." (see Final Office Action, page 2) In order to alleviate

this shortcoming, the Examiner states "It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an additional IFDC plate, *since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.*" (emphasis added; see Final Office Action, page 2) The alleged isolation and flow direction control plate of Harper has been clearly stated by the Examiner as being the "*diametric* baffle 24 extending between an upper edge 26 and a lower edge 28 to partition the cylindrical core cavity 15 defined by the housing 12 into a first compartment 30 and a second compartment 32." (see Harper, col. 3, lines 12-25 and FIG. 2) The Examiner's rejection has been clearly articulated as "since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art," it would have been obvious to simply add another diametric baffle (element 24) to the Harper device, i.e., mere duplication is the use of more than one of the same element.

Applicants have pointed out that this mere duplication would be impossible, i.e., the Harper device would cease to function as designed and/or is incapable of incorporating a "merely duplicated" or second diametric baffle. In addition, the Examiner agrees with Applicants yet somehow still maintains the rejection as originally articulated, e.g., the Examiner still points to In re

Harza, 274 F.2d 669 (CCPA 1960) for support. There is no doubt in the record of the present application that the Examiner has relied upon the alleged holdings of *In re Harza* to modify the Harper device to include a second diametric baffle, i.e., the alleged isolation and flow direction control plate (diametric baffle) of Harper can simply be "merely duplicated" to achieve Applicants claimed invention, "to employ in Harper an additional IFDC plate for the purpose of increasing the residence time and heat exchange of the shell side fluid. This motivation was stated in the previous Office action."

The Examiner's very next sentence at page 4 of the Final Office Action states "*The Examiner does not suggest merely employing a second "diametric" baffle, since this would be physically impossible.*" Applicants submit that the alleged "mere duplication" of working parts, e.g., *In re Harza* relied upon by the Examiner, by definition, is "merely employing a second diametric baffle." The Examiner has clearly relied upon the diametric baffle of Harper as being analogous to the IFDC plate(s) of the claimed invention. Applicants submit that it is impossible for Applicants to respond to a rejection that is allegedly based upon the position that Harper's diametric baffle may be merely duplicated (pages 3 and 4 of the final office action), but yet it may not be merely duplicated (page 4) at the same time.

In the Examiner's remarks, the Examiner next relies upon a "very fundamental concept" that "does not warrant patentability." Applicants appreciate the Examiner's opinion as to the status of the prior art of record. However, Applicants submit that it is necessary for the Examiner to provide evidence of this opinion in the prior art of record. Accordingly, "one of ordinary skill in the art would employ any number of baffles to improve heat exchange." Applicants submit that the Examiner's rejection is based upon the Harper reference, i.e., "Claims 1-4, 6, 8 and 11-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Harper." However, the Examiner has allegedly relied upon the Harper reference and a combination of the holding In re Hazra, "any number of prior art references, i.e., Maniscalco, Agate, Halleck Walker, Pfluger et al, Pittmon et al and Burns," and very fundamental concepts. Applicants remind the Examiner that no secondary reference has been listed to substantiate the Examiner's rejection to claims 1-4, 6, 8 and 11-14. In addition, where would the Examiner "employ any number of baffles" in the Harper device to achieve the claimed invention? Applicants submit that the isolation and flow control devices are not just "any number of baffles," but they have been specifically claimed as having a precise structural relationship.

For example, Applicants submit that the Examiner has failed to show the unique combination of limitations of the claimed invention of claim 1, including the feature(s) of: "at least one tube side fluid outlet, said tubes extending between said tube side fluid inlet and said tube side fluid outlet, wherein said shell side fluid path extending between said shell side inlet and said shell side fluid outlet is arranged in a cross flow fluid arrangement with respect to each of said tube side fluid inlets and said tubes; and *a plurality of isolation and flow direction control plates positioned normal to said shell side fluid path and in parallel with said tube side fluid inlet and said tubes in the shell of the heat exchanger assembly for creating adjacent smaller heat exchangers, each of said isolation and flow direction control plates including at least one fluid slot for permitting fluid communication between corresponding adjacent smaller heat exchangers, said fluid slots extending normal to said shell side fluid path and in parallel with said tubes.*" (emphasis added)

Applicants have argued and the Examiner has admitted that Harper cannot incorporate more than one alleged isolation and flow direction control plate and still properly function. Further, Harper clearly does not and cannot include more than one isolation and flow direction control plate oriented in the same manner as the claimed invention (e.g., with respect to the respective fluid

flows) and having fluid slots extending normal to the shell side fluid path and in parallel with the tubes. Accordingly, all of the rejections based upon the Harper reference are improper and should be withdrawn.

**Applicants Alleged Admitted Prior Art**

With respect to the Examiner's rejection based upon Harper in view of Applicant's Alleged Admitted Prior Art, Applicants once again traverse this rejection. Applicants have clearly not admitted that pages 1-3 of Applicants own patent application, particularly those portions describing problems associated with the structure of the background art, qualify as prior art under 35 U.S.C. § 102. Accordingly, this rejection is improper.

Applicants have seasonably challenged the Examiner's use of their own patent application as a roadmap to modify the prior art of record. The Examiner states that if "the section under "Background Art" is not "prior art," then what is it? Is this part of applicant's invention? The Examiner requests any and all documents associated with "Background Art," so that the particular relevance and critical dates may be determined." (see Final Office Action, page 5-6) Applicants submit that the identification of problems associated with Applicants field of endeavor may constitute as much a part of



the invention as the solution itself. "[A] patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103." In re Spinnoble, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969).

The Examiner has clearly misinterpreted section 2129 of the MPEP. "Regardless of semantics, i.e. prior art, background art, conventional, well known, commonly, the entire section labeled under "Background Art" is considered to be an admission." (see Final Office Action, page 5) Applicants are not aware of any portion of the MPEP, let alone section 2129, that supports this position by the Examiner. The Examiner is reminded that the difference between background art and prior art is not *semantics*. Prior art is/are document(s) that actually qualify under the requirements of 35 U.S.C. § 102. Alternatively, Applicants own disclosure may contain admissions, but these admissions must be either explicitly stated as "prior art" or the Examiner's use of these statements as admissions must go unchallenged by Applicants during prosecution.

As discussed during a personal interview with the Examiner, the contents of the background art contains Applicants own analysis and identification of problems relating to subject matter that Applicants consider relevant to the claimed invention. The Examiner is reminded that the purpose of the Background of the Invention is to assist the patent office in the rapid classification of Applicants invention within the patent office, e.g., see Field of the Invention and/or to assist the Examiner in understanding Applicants invention. As to the portion relating to the Background Art, this section is not suggested for the purpose of relieving the Examiner's burden of searching the prior art or serving as a roadmap for the Examiner to reconstruct Applicants claimed invention in a piecemeal fashion with the prior art. Instead, this section is intended to help third parties, including the Examiner, who later read the issued patent to better understand the claimed invention.

Applicants submit that it is a disservice to the patent application process for any Examiner to state as a matter of course that all subject matter falling under the Background Art section of a patent application automatically and indisputably qualifies as prior art. Applicants submit that it is certainly improper to ignore Applicants subsequent and repeated traversal of this interpretation. These subsections of Applicants' application have been

requested by the Patent Office (see section 600 of the MPEP, e.g., 608.01(a), 608.01(c), 608.01 (d), 608.01(p)) to facilitate classification, searching and a better technical understanding of Applicants invention.

The Examiner alleges that "Applicant's admission is it is well known in the art to employ a turbine connected in series to the shell side outlet of a heat exchanger. Since Harper and Applicant's admission are both from the same field of endeavor and/or analogous art, the purpose disclosed by Applicant's admission would have been recognized in the pertinent art of Harper." First, Applicants have not admitted that the structure on pages 1-3 of the present application qualifies as prior art under 35 U.S.C. § 102. Second, even if the structure did qualify as prior art, that statement that "the purpose disclosed by Applicant's admission would have been recognized in the pertinent art of Harper" is unsubstantiated by the record. Specifically, Applicant's identification and analysis of problems associated with the background art may constitute as much a part of an invention as the solution itself. Accordingly, the Examiner's use of Applicant's disclosure is improper. Accordingly, this rejection should be withdrawn.

At page 5 of the final office action, the Examiner attempts to clarify the rejection based upon Applicant's alleged admitted prior art, "Applicants'

admission is not applied to disclose or teach the heat exchanger per se, rather that employing a tube and shell heat exchanger in combination with a turbine is well known.” However, since Harper by itself fails to teach or suggest the combination of limitations of the claimed invention directed to just a heat exchanger (see claim 1), Applicants submit that the Examiner’s above-identified paraphrasing of Applicants patent application certainly fails to cure this deficiency. For example, with respect to claim 19, “at least one tube side fluid outlet, said tubes extending between said tube side fluid inlet and said tube side fluid outlet, wherein said shell side fluid path extending between said shell side inlet and said shell side fluid outlet is arranged in a cross flow fluid arrangement with respect to each of said tube side fluid inlets and said tubes; and *a plurality of isolation and flow direction control plates positioned normal to said shell side fluid path and in parallel with said tube side fluid inlet and said tubes in the shell of the heat exchanger assembly for creating adjacent smaller heat exchangers, each of said isolation and flow direction control plates including at least one fluid slot for permitting fluid communication between corresponding adjacent smaller heat exchangers, said fluid slots extending normal to said shell side fluid path and in parallel with said tubes*” (emphasis

added) clearly has not been shown by the Examiner as existing in the prior art of record.

As to the Examiner's request that any and all documents be forwarded to the Examiner, this request has already been and will be honored as is required under Applicants duty to disclose. Applicants submit that *documentation* potentially qualifying under 35 U.S.C. § 102 has already been submitted to the Examiner in the Information Disclosure Statements of the present application. Further, as additional information becomes known, Applicants will continue to submit this information as is required under Applicants duty to disclose. The Examiner is invited to contact the undersigned via telephone in the Washington, DC area to conduct a personal interview and/or to discuss what documents the Examiner is actually requesting from Applicants.

In accordance with the above discussion of the patents relied upon by the Examiner, Applicants respectfully submit that these documents, either in combination together or standing alone, fail to teach or suggest the invention as is set forth by the claims of the instant application.

Accordingly, reconsideration and withdrawal of the claim rejection are respectfully requested. Moreover, the Applicants respectfully submit that the instant application is in a condition for allowance.

As to the dependent claims, Applicants respectfully submit that these claims are allowable due to their dependence upon an allowable independent claim, as well as for additional limitations provided by these claims.

### **CONCLUSION**

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but rather to merely show the state-of-the-art, no further comments are necessary with respect thereto.

In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

Docket No. 2929-0150P

Appl. No. 09/874,538

Art Unit: 3743

Amendment dated November 7, 2003

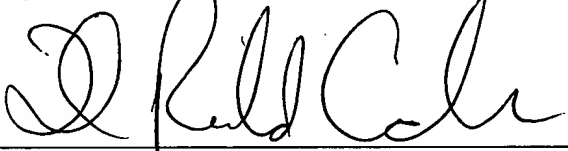
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

D. Richard Anderson

Reg. No. 40,439

P. O. Box 747

Falls Church, VA 22040-0747

(703)205-8000

  
DRA/MTS/mmi